

REMARKS

Claims 1-18 are pending. With entry of this amendment, claims 1, 7, 8, 10-12, and 14-18 have been amended. Upon entry of the present amendment, claims 1-12 and 14 will be pending and under examination in this application. No new matter has been added.

The Requirement for Restriction

According to the Examiner, the application contains four inventions that are not linked so as to form a single general inventive concept. As a result, the Examiner has required election of one of the following four inventions:

Group I : claim(s) 1-12, drawn to an electrical storage device;

Group II : claim 13, to an electronic apparatus;

Group III : claim(s) 14-16, drawn to a method of manufacturing an electrical storage device.

Group IV: claim(s) 17-18, drawn to a method of using an electrical storage device.

Applicants hereby traverse the restriction requirement. As indicated in the application, the problem with the prior art is that when electrolyte is provided to a lithium ion secondary battery where there is electrochemical contact between the lithium metal and the negative electrode, the lithium ions immediately begin to flow. This creates non-uniform current and it is impossible to check the amount of lithium ion that is carried. Par. [0011]. Further, it causes the negative electrode to harden in a rippled shape. Par. [0012]. Also, the temperature rises before the cell is fully sealed. Par. [0014].

According to the present invention as defined by claim 1, these problems are avoided by eliminating the direct electrochemical contact between the lithium metal and the negative (or positive) electrode that would result in activation of the battery. Instead,

as recited in the amended claims, external terminals are provided which are connect to the positive, negative and lithium electrodes. Then the lithium ions are supplied to the activating electrode (negative or positive) “by flowing current between the lithium electrode and the [activating] electrode through an external circuit which connects the lithium electrode terminal with the [activating] electrode terminal.

Claim 13 calls for the electrical storage device according to claim 1 and thus includes all of the limitations of claim 1. In fact it depends for patentability on claim 1 so it depends on the same single inventive concept as claim 1.

Claim 14 is directed to a method of manufacturing the device defined by claim 1. As amended it calls for assembling the same elements defined in claim 1 and then providing the “lithium ions to the [activating] electrode by flowing current between the lithium electrode and the [activating] electrode through an external circuit.” Thus, this method of manufacturing is based on the same single inventive concept, i.e., that the lithium ions are prevented from moving until an external circuit is used to activate the battery.

Claim 17 is directed to a method of using the device of claim 1. Hence it is limited to that device and thus depends on the single general inventive concept of claim 1.

For these reasons, the Examiner should withdraw the restriction requirement and examine all of the claims on the basis of the inventive concept upon which they are based.

In order to be completely responsive, Applicants hereby elect, with traverse, to prosecute claims corresponding to Group I (claims 1-12). This election is made without prejudice. Applicants reserve the right to pursue cancelled and/or non-elected subject matter in one or more continuation or divisional applications.

The Examiner also indicated that if the claims of Group I are selected, the applicant must elect between one of the following three species:

a. the electrode to which the lithium electrode is out of direct contact being the negative electrode species or the positive electrode species or both the positive and negative electrodes species (claims 1 and 17)

b. supplying lithium ion from the lithium electrode to either the negative electrode species, positive electrode species or both the positive and negative electrodes species (claims 1 and 17)

c. whether the lithium electrode faces the negative electrode species, positive electrode species or both the positive and negative electrodes species (claim 6).

For the purpose of further prosecution, the applicant elects the lithium electrode arranged to be out of direct contact with the negative electrode, and the lithium ion being supplied to the negative electrode by flowing a current between the lithium electrode and the negative electrode through an external circuit as recited in the Abstract.

Claims 1 and 14 have been amended to recite the terminals that allow for connection of the storage device to the external circuit to provide the lithium ions. The amendments to the other claims were to correct grammatical errors and more distinctly describe certain aspects of the invention. Support for the terminal limitation may be found throughout the specification and in particular in the published application at paragraph 0155. Thus, no new matter has been added by way of the present amendment. Further, the amendments have been made to conform with U.S. practice and not for reasons relating to patentability.

CONCLUSION

In view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining, which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Dated: March 27, 2009

Respectfully submitted,

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